AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 5.2.2.4

Properties of small molecules

Past-paper questions

Tier	**Higher**
Question groups	**1**
Available paper years	**2020–2020**

Using this booklet

1. Answer the questions in order and show your working.
2. Original question numbers and marks are retained.
3. Print at actual size (100%) for measuring questions.
4. Use the companion answer booklet to check your work.

Name: _____ **Date:** _____

Whole questions are retained for context, so some parts assess other specification points. Current and legacy sources are labelled. Continue on extra paper if needed.

5.2.2.4 Properties of small molecules

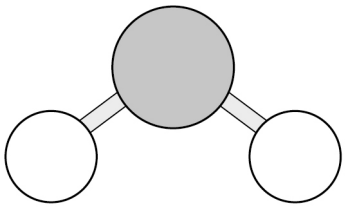
Question 01

November 2020 | 8464/C/1H | Original Q2

0 2 This question is about substances with covalent bonding.

0 2 . 1 **Figure 2** shows a ball and stick model of a water molecule (H_2O).

Figure 2



Suggest **one** limitation of using a ball and stick model for a water molecule.

[1 mark]

_____

_____

_____

0 2 . 2 Ice has a low melting point.

Water molecules in ice are held together by intermolecular forces.

Complete the sentence.

[1 mark]

Ice has a low melting point because the

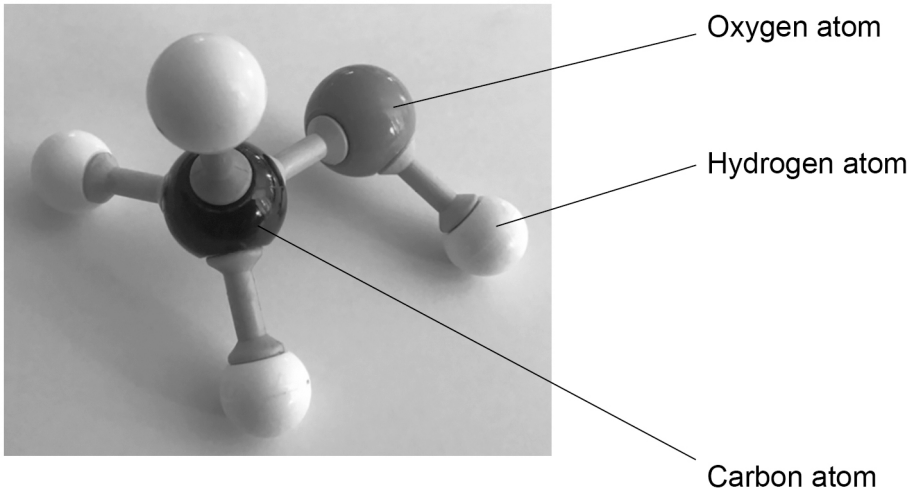
intermolecular forces are _____.

5.2.2.4 Properties of small molecules

Question 01 · continued

0 2 . 3 **Figure 3** shows the structure of a molecule.

Figure 3



What is the molecular formula of the molecule in **Figure 3**?

[1 mark]

Question 2 continues on the next page

5.2.2.4 Properties of small molecules

Question 01 · continued

Diamond has a giant covalent structure.

0 2 . 4 What is the number of bonds formed by each carbon atom in diamond?

[1 mark]

Tick (✓) **one** box.

2 ☐ 3 ☐ 4 ☐ 8 ☐

0 2 . 5 Give **two** physical properties of diamond.

[2 marks]

1 _____

2 _____

0 2 . 6 Name **two** other substances with giant covalent structures.

[2 marks]

1 _____

2 _____

8